

What is claimed is:

1. A skin barrier replacement composition comprising an aqueous formulation of at least two lipids in a non-crystalline phase lamellar array which adopt a crystalline lamellar phase upon application to mammalian skin.
2. The composition of claim 1, comprising at least three lipids.
3. The composition of claim 2, wherein the at least three lipids comprise a ceramide, a saturated fatty acid and cholesterol.
4. The composition of claim 3, comprising bovine brain ceramide as the ceramide, palmitic acid as the saturated fatty acid and cholesterol in ratios by mol of from 1-5:1-5:1-5, respectively.
5. The composition of claim 3, comprising ceramide 2 as the ceramide, palmitic acid as the saturated fatty acid and cholesterol in ratios by mol of from 1-5:1-5:1-5, respectively.
6. The composition of claim 2, wherein said aqueous formulation of lipids consists of MLV or LUV liposomes or a mixture thereof.
7. The composition of claim 6, wherein said liposomes have a median diameter of 15 to 1500 nm.
8. The composition of claim 2, wherein said crystalline lamellar phase forms after penetration into the stratum corneum of the skin.

9. The composition of claim 2, wherein said non-crystalline phase is a liquid crystal

10. The composition of claim 2, wherein said non-crystalline phase is a gel

11. The composition of claim 2, wherein said non-crystalline phase is a complex phase.

12. The composition of claim 11, wherein said complex phase is a combination of phases selected from among gel, liquid crystal and crystalline phases, wherein the crystalline phase does not exceed 30% of the lipids by mass.

13. The composition of claim 2, wherein said crystalline phase induced upon application to the skin is greater than 70% crystalline as measured by deuterated fatty acid mobility in NMR.

14. The composition of claim 2, wherein the aqueous formulation contains no organic solvent or alcohol.

15. The composition of claim 2, wherein the aqueous formulation is sufficiently polar to support MLV formation

16. The composition of claim 2, wherein the composition contains no squalene.

17. The composition of claim 2, wherein the lipid mixture contains no phospholipid or glucosylceramide

18. The composition of claim 2, wherein the lipid mixture contains no unsaturated fatty acid.

19. The composition of claim 2, wherein the lipid mixture contains no surfactant.

20. A skin barrier replacement composition for application to the skin comprising an aqueous formulation of a ceramide, cholesterol and a fatty acid in a ratio (1-5:1-5:1-10 mol:mol:mol) in a liquid-crystal phase or gel phase lamellar array.

21. The composition of claim 20, wherein the lipid mixture contains no surfactant.

22. A method of recovering or improving a mammalian skin permeability barrier comprising

- (a) administering to the skin a composition of lipids comprising an aqueous formulation of at least two lipids in a non-crystalline phase lamellar array; and
- (b) allowing said composition to dry, wherein said dried composition adopts a crystalline lamellar phase after said administering to the skin.

23. The method of claim 22, wherein the aqueous formulation comprises at least three lipids.

24. The method of claim 23, wherein the at least three lipids comprise a ceramide, a saturated fatty acid and cholesterol.

25. The method of claim 24, wherein the formulation comprises bovine brain ceramide as the ceramide, palmitic acid as the saturated fatty acid and cholesterol in ratios by mass of from 1-5:1-5:1-10, respectively.

26. The method of claim 24, wherein the formulation comprises ceramide 2 as the ceramide, palmitic acid as the saturated fatty acid and cholesterol in ratios by mass of from 1-5:1-5:1-10, respectively.

27. The method of claim 23, wherein said aqueous formulation of lipids consists of MLV liposomes.

28. The method of claim 27, wherein said MLVs have a median diameter of 100 to 1500 nm.

29. The method of claim 24, wherein said crystalline lamellar phase forms after penetration into the stratum corneum of the skin.

30. The method of claim 24, wherein said non-crystalline phase is a liquid crystal.

31. The method of claim 24, wherein said non-crystalline phase is a gel

32. The method of claim 24, wherein said non-crystalline phase is a complex phase.

33. The method of claim 32, wherein said complex phase is a combination of phases selected from among gel, liquid crystal and crystalline phases, wherein the crystalline phase does not exceed 25% of the lipids by mass.

34. The method of claim 24, wherein said crystalline phase induced upon application to the skin is greater than 70% crystalline as measured by deuterated fatty acid mobility in NMR.

35. The method of claim 24, wherein the aqueous formulation contains no organic solvent or alcohol.

36. The method of claim 24, wherein the aqueous formulation is sufficiently polar to support MLV formation.

37. The method of claim 24, wherein the composition contains no squalene.

38. The method of claim 24, wherein the lipid mixture contains no phospholipid.

39. The method of claim 24, wherein the lipid mixture contains no unsaturated fatty acid.

40. A pharmaceutical preparation comprising a therapeutic compound in an aqueous formulation of at least three lipids in a non-crystalline phase lamellar array which adopt a crystalline lamellar phase upon application to mammalian skin and further comprising a therapeutic or bioactive agent.